

REPORT ON OIL ENGINE MACHINERY.

No. 12206

Received at London Office FEB -1 1939

Date of writing Report 25th January 1939 When handed in at Local Office30th Jan. 1939 Port of

GOTHENBURG.

No. in Survey held at GOTHENBURG

Date, First Survey 25th May 1938 Last Survey 26th January 1939

Number of Visits 87.

Reg. Book Supplement

90505 on the Twin Triple Quadruple Screw vessel

M/S VENEZUELA

Tons { Gross 6991
Net 4060

Built at GOTHENBURG

By whom built A.B. GÖTAVERKEN

Yard No. 530 When built 1939.

Engines made at GOTHENBURG

By whom made A.B. GÖTAVERKEN

Engine Nos 1354 When made 1939.

Donkey Boilers made at LOUGHBOROUGH By whom made WALTER W. COLTMAN & Co. Ltd.

Boiler No. 6262 When made 1938.

Brake Horse Power 2 x 2700

Owners REDERIAKTIEBOL. NORDSTJERNAN

Port belonging to STOCKHOLM.

Nom. Horse Power as per Rule 945

Is Refrigerating Machinery fitted for cargo purposes YES

Is Electric Light fitted YES

Trade for which vessel is intended

GENERAL

24 13 57 16 3 76

OIL ENGINES, &c.—Type of Engines Crosshead Supercharged Diesel Oil Engines 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 630 mm. Length of stroke 130 mm. No. of cylinders 2 x 8 No. of cranks 2 x 8Mean Indicated Pressure 7.6 kg/cm²

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 892 mm.

Is there a bearing between each crank Yes

Revolutions per minute 125

Flywheel dia None

Weight

Means of ignition Compression

Kind of fuel used Diesel Oil

Crank Shaft,

{ Solid forged
Semi built
All built

dia. of journals

Approved as per Rule 430 mm.

Crank pin dia. 430 mm.

Crank Webs

Mid. length breadth

shrunk

Thickness parallel to axis 266 mm.

Thickness around eye hole 195 mm.

Flywheel Shaft, diameter as per Rule

Intermediate Shafts, diameter as fitted

Thrust Shaft, diameter at collars as fitted

Tube Shaft, diameter as per Rule

Screw Shaft, diameter as fitted

Is the tube screw shaft fitted with a continuous liner

No.

Bronze Liners, thickness in way of bushes as per Rule

Thickness between bushes as fitted

Is the after end of the liner made watertight in the

propeller boss

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner.

If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive

If two liners are fitted, is the shaft lapped or protected between the liners

Is an approved Oil Gland or other appliance fitted at the after end of the tube

shaft Yes If so, state type Cedervall's Oil Glands

Length of Bearing in Stern Bush next to and supporting propeller 1825 mm.

Propeller, dia. 4100 mm Pitch 4260 mm. No. of blades 3

Material Bronze

whether Moveable Not moveable Total Developed Surface 5.5 M² each sq. feet

Method of reversing Engines Direct with comp. air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes

Means of lubrication

Forced

Thickness of cylinder liners 46-36 mm. Are the cylinders fitted with safety valves Yes

Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine led to a funnel

Cooling Water Pumps, No. Two 5000 lit/min each

Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Bilge Pumps worked from the Main Engines, No. One

Diameter 130 mm

Stroke 230 mm.

Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line

No. and Size 1 ballast 150 tons/h

1 bilge 20 tons/h

1 plunger 20 tons/h

1 emergency 60 tons/h

1 transfer pump 50 tons/h

How driven electric motor

electric motor

electric motor

electric motor

Is the cooling water led to the bilges No

If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

arrangements

Ballast Pumps, No. and size One 150 tons/h

Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size Four 60 m³/h each

Are two independent means arranged for circulating water through the Oil Cooler Yes

Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces 2 x 3" & 2 x 2 1/2"; From thrust bearing recess 2 x 2 1/2"; From tunnel well 1 x 3"; From cofferdams 1 x 2 1/2" In Pump Room

In Holds, &c. Held No. 1-2 x 3"; No. 2-2 x 3"; No. 3-2 x 3"; No. 4-4 x 3"; No. 5-3 x 3" and from cofferdams between frames Nos. 29 & 30 and Nos. 38 & 39 each 1 x 2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 x 6" fr. ballast p.; 1 x 3" fr. sep. bilge p.; 1 x 3" fr. dir. dr. bilge p. & 1 x 3 1/2" fr. emergency p.

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes

Are the Bilge Suctions in the Machinery Spaces

led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

Are they fitted with Valves or Cocks Yes

Are all Sea Connections fitted direct on the skin of the ship Yes

Are the Overboard Discharges above or below the deep water line Above

Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes

Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes

How are they protected

What pipes pass through the bunkers No coal bunkers

Have they been tested as per Rule

What pipes pass through the deep tanks No deep tanks

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one

compartment to another Yes

Is the Shaft Tunnel watertight Yes

Is it fitted with a watertight door Yes

worked from top platform

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

Main Air Compressors, No. Two

No. of stages Two

Diameters 350 & (350-310) Stroke 160 mm.

Driven by Electric motor

Auxiliary Air Compressors, No.

No. of stages

Diameters

Stroke

Driven by

Small Auxiliary Air Compressors, No. One

No. of stages Two

Diameters 106 & 34 mm. Stroke 80 mm.

Driven by Steam engine

What provision is made for first Charging the Air Receivers by the steam engine driven air compressor (above)

Supercharge Scavenging Air Pumps, No. Two

Diameter 950 mm.

Stroke 800 mm.

Driven by main engines.

Auxiliary Engines crank shafts, diameter as per Rule

163 mm.

No. Four

Have the Auxiliary Engines been constructed under special survey Yes

Position Two on port, and two on starboard side in the engine room.

Is a report sent herewith Yes

AIR RECEIVERS:—Have they been made under survey Yes State No. of Report or Certificate ✓
Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes
Can the internal surfaces of the receivers be examined and cleaned Yes Is a drain fitted at the lowest part of each receiver Yes
Injection Air Receivers, No. None Cubic capacity of each ✓ Internal diameter ✓ thickness ✓
Seamless, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓
Starting Air Receivers, No. Two Total cubic capacity 2 x 19.7 = 39.4 m³ Internal diameter 1800 & 1850 mm thickness 25.0 & 25.5 mm
Seamless, lap welded or riveted longitudinal joint Riveted Material S.M. Steel Range of tensile strength 45.0 - 49.4 kg/cm² Working pressure by Rules 26.1 kg/cm²
Actual 25.0

IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? Yes
Is the donkey boiler intended to be used for domestic purposes only No Same also intended for the small starting up compressor and for heating coils.

PLANS. Are approved plans forwarded herewith for Shafting 30.11.37 Receivers 3.11.37 & 5.11.37 Separate Fuel Tanks 11.11.37
(If not, state date of approval.)
Donkey Boilers ✓ General Pumping Arrangements 3.11.37 Pumping Arrangements in Machinery Space 3.11.37
Oil Fuel Burning Arrangements ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes.
State the principal additional spare gear supplied 1 cylinder liner, 1 cooling jacket, 8 fuel valve spindles, 8 atomizers, 1 suction valve spindle, 15 exhaust valves, 1 starting air valve, 3 sets of piston rings, 2 telescopic cooling pipes, 3 upper halves of crank pin brasses, 3 lower halves of crosshead brasses, 1 set of main bearing brasses, 1 set of crosshead and crankpin brasses for the supercharge air pumps, 1 fuel oil pump complete and 8 sets of all working parts for same, 1 propeller shaft with nut and 2 cast iron propellers.

The foregoing is a correct description,

ANTERBOLAGET GOTAVÄRKEN

Manufacturer.

Dates of Survey while building
During progress of work in shops-- 1938: May 25, 27, 31, July 2, 7, 22, 25, Aug. 1, 2, 3, 4, 10, 15, 19, 31, Sept. 1, 6, 8, 10, 12, 14, 15, 19, 20, 21, 22, 23, 24, 26, 27, Oct. 1, 3, 5, 10, 7, 12, 13, 15, 17, 18, 19, 20, 21, 22, 25, 28, 31.
Nov. 3, 4, 5, 7, 9, 11, 14, 15, 16, 30; Dec. 27. 1939: Jan. 3, 4, 7, 9, 11
During erection on board vessel-- 1938: Nov. 14, 17, 19, 22, 25, 28; Dec. 5, 9, 12, 13, 15, 19, 22, 27. 1939: Jan. 10, 11, 12, 13, 15, 19, 20, 21, 23, 26
Total No. of visits 87

Dates of Examination of principal parts—Cylinders 19/5, 31/10, 1/11 1938 Covers 19/5, 31/10, 1/11 1938 Pistons 31/8 1938 Rods 31/8 1938 Connecting rods 17/9 & 9/11 1938
Crank shafts 17/8 1938 & 14/9 1938 Flywheel shaft ✓ Thrust shafts 24/9 1938 Intermediate shafts 12/12 38, 31/39, 14/39 Tube shaft ✓
Screw shaft 27/12 1938 Propellers 11/1 1939 Stern tube 25/10 1938 Engine seatings 22/9 1938 Engines holding down bolts 22/11 1938
Completion of fitting sea connections 5/11 1938 Completion of pumping arrangements 10/1 1939 Engines tried under working conditions 29/9, 1/11 1938, 4/1 1939

Crank shafts Material S.M. Steel Identification Mark LLOYDS No. 1196/7 GR 14.9.38 Flywheel shaft, Material ✓ Identification Mark LLOYDS No. 262, 305, 306, 4765 E 13/12.38
Thrust shaft, Material S.M. Steel Identification Mark LLOYDS No. 304/4763 SJ. 24/9.38 Intermediate shafts, Material S.M. Steel Identification Marks LLOYDS No. 46, 4764, 4809 E 10/11.39
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material S.M. Steel Identification Mark LLOYDS Nos. 253, 4762, 4791 E 27/12.38
Identification Marks on Air Receivers LLOYDS No. 431/2 HP 40 KG WP 45 KG E 11.11.38 FC. LLOYDS 7061 HT 80 Atm. WP 40 Atm. WTM 12.5.38. (intended for auxiliary oil engines)

Is the flash point of the oil to be used over 150° F. Yes
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with Yes
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No If so, have the requirements of the Rules been complied with ✓
If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with Yes
Is this machinery duplicate of a previous case Yes If so, state name of vessel M/S PERU Yard No. 519.

General Remarks (State quality of workmanship, opinions as to class, &c. The main and auxiliary engines of this vessel have been built under Special Surveys and all the requirements of the Rules have been complied with. The shafting as per forging reports attached. The material of the air receivers as per test sheets attached. The workmanship is good, and the material fulfils the requirements of the Rules. The dimensions are as specified and in accordance with the Rules and approved plans. The auxiliary machinery consists of four 3-cylinder 450SA diesel oil engines as per report attached and one small generator aggregate of 12 kW for emergency purposes. This generator is driven by a 2-cylinder 250SA diesel oil engine having a cylinder diameter of 110 mm. and 140 mm stroke and is manufactured by Messrs. A.-B. Jönköpings Motorfabrik, Jönköping, as per certificate attached. The machinery has been tested under full working power on a trial trip and found to work satisfactory.

The machinery of this ship is eligible in my opinion to be classed in the Register Book with notation * LMC 1.39.

The amount of Entry Fee .. Kr. 114:00 : When applied for, 30th Jan. 1939
Special Kr. 2322:75 :
Starting air receiver
Donkey Boiler Fee Kr. 159:60 : When received, 6.2 1939
Travelling Expenses (if any) £ : ✓

Committee's Minute

Assigned

+ Lmb 1.39
S.A. - 85 K

Oil Eng
Og.

Folke Cassel
Engineer Surveyor to Lloyd's Register of Shipping.

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Foundation